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Nos. 07-588, 07-589 & 07-597

In the Supreme Court of the United States

ENTERGY CORPORATION, *Petitioner,*

v.

ENVIRONMENTAL PROTECTION AGENCY, ET AL., *Respondents.*

PSEG FOSSIL LLC, ET AL., *Petitioners,*

v.

RIVERKEEPER, INC., ET AL., *Respondents.*

UTILITY WATER ACT GROUP, *Petitioner,*

v.

RIVERKEEPER, INC., ET AL., *Respondents.*

On Writ of Certiorari to the United States Court of Appeals for the Second Circuit

BRIEF FOR THE STATES OF ILLINOIS, IOWA, MARYLAND, MONTANA, OHIO, AND OKLAHOMA, THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND THE COMMONWEALTH OF PUERTO RICO AS *AMICI CURIAE* IN SUPPORT OF RESPONDENTS

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QUESTION PRESENTED

Whether § 316(b) of the Clean Water Act, 33 U.S.C. § 1326(b), authorizes the Environmental Protection Agency to compare costs with benefits in determining the "best technology available for minimizing adverse environmental impact" at cooling water intake structures.

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INTEREST OF THE *AMICI CURIAE*

The *amici* have two critical interests in the outcome of this case. First, the *amici* are devoted to preserving the aquatic ecosystems on which they depend. Absent stringent regulation, cooling water intake structures have devastating effects on fish and other aquatic organisms, which are not only important environmentally, but also serve critical commercial, economic, and recreational purposes. Both because of the importance of aquatic ecosystems and because many have already been substantially compromised, the *amici* have a vital interest in protecting these ecosystems from additional, undue predation by human activity.

Second, because the States share responsibility for enforcing the Clean Water Act ("Act") with the federal Environmental Protection Agency ("EPA"), the *amici* have a powerful interest in a regulatory system that is workable in practice and provides for accurate and consistent results. Yet under the EPA regulations challenged here, permitting authorities are required to undertake complicated and costly assessments that Congress has not authorized and that EPA itself failed to complete. The *amici* are concerned that requiring state agencies to conduct such assessments would strain state resources, encourage needless disputes between state permitting authorities and applicants, slow the permitting process—delaying the issuance of timely permits—and likely lead to inconsistent or inaccurate permitting decisions.

STATEMENT

1. Many power plants and other industrial facilities cool their equipment with water drawn from oceans, rivers, lakes, and streams using one of two basic "cooling water intake structures." Pet. App. 6a, 12a n.3.[1] A "once-through" cooling system takes in water, sends it through the facility once to absorb heat, and returns it directly to the water body at a much higher temperature. *Id.* at 12 n.3. By contrast, a "closed-cycle" system draws in an initial quantity of water and then continually recirculates it between heat-bearing machinery and an external cooling device, such as a cooling tower or pond. *Ibid.* Because new water is added to closed-cycle systems solely to compensate for evaporation, they use 96 to 98 percent less fresh water (and 70 to 96 percent less salt water) than comparable once-through systems. 69 Fed. Reg. 41,576, 41,601 n.44 (2004).

2. The environmental impact of withdrawing large amounts of cooling water is "staggering." *Riverkeeper, Inc. v. United States Environmental Protection Agency*, 358 F.3d 174, 181 (2d Cir. 2004) (hereafter "*Riverkeeper I*"). In the rule at issue here, EPA determined that cooling water intake structures may cause "multiple * * * undesirable and unacceptable environmental impacts," including:

> entrainment and impingement; reductions of threatened and endangered species; damage to critical aquatic organisms, including

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[1] Citations are to the appendix to the petition for certiorari in *Utility Water Act Group v. Riverkeeper, Inc.*, No. 07-597 (U.S.).

> important elements of the food chain; diminishment of a population's compensatory reserve; losses to populations including reductions of indigenous species populations, commercial fisheries stocks, and recreational fisheries; and stresses to overall communities and ecosystems as evidenced by reductions in diversity or other changes in system structure and function.

69 Fed. Reg. at 41,586.[2]

Notwithstanding these devastating effects, the nation's power plants and factories continue to withdraw more than 279 billion gallons of cooling water each day. See *Riverkeeper I*, 358 F.3d at 181. EPA estimates that the use of cooling water by the thermoelectric power industry accounts for fully 47 percent of all withdrawals from U.S. waters. 69 Fed. Reg. at 41,586. Because of the vast quantities of cooling water used, and the associated destruction of fish and other organisms, the power industry "[c]ollectively * * * constitutes the country's single largest consumer of aquatic life." James R. May & Maya K. van Rossum, *The Quick and the Dead: Fish Entrainment, Entrapment, and the Implementation and Application of Section 316(b) of the Clean Water Act*, 20 Vt. L. Rev. 373, 381 (1995). Indeed, EPA has determined that the nation's larger power plants alone destroy the equivalent of more than 3.4 billion fish and

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[2] "Impingement" occurs when larger organisms, like fish and shellfish, are crushed against the screens at the mouth of the intake pipe, while "entrainment" refers to smaller organisms, like plankton, eggs, and larvae, being sucked into the pipe and killed by the system's pressure and heat. 69 Fed. Reg. at 41,586.

shellfish each year. 69 Fed. Reg. at 41,586. This means that a single power plant may impinge more than one million adult fish in a three-week period. See *Riverkeeper I*, 358 F.3d at 181.

3. In 1972, Congress amended the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters," 33 U.S.C. § 1251(a), "the national goal" being to achieve "water quality which provides for the protection and propagation of fish, shellfish, and wildlife," 33 U.S.C. § 1251(a)(2). Because of the devastating ecological impacts of impingement and entrainment, Congress called on the EPA to remedy the problem by "requir[ing] that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available [("BTA")] for minimizing adverse environmental impact." 33 U.S.C. § 1326(b). Congress recognized that even as the Act's pollution control efforts improve overall water quality, the effects of impingement and entrainment could inhibit the recovery and preservation of aquatic ecosystems.

In 1976, EPA issued its first regulations pursuant to § 316(b), which the Fourth Circuit remanded to EPA without addressing their merits. 69 Fed. Reg. at 41,583-41,584 (discussing *Appalachian Power Co. v. Train*, 566 F.2d 452 (4th Cir. 1977)). After years passed without new regulations, environmental groups sued EPA and won a consent decree requiring the agency to establish a timetable to issue rules under § 316(b) in three phases. 69 Fed. Reg. at 41,583. Phase I regulates intake structures at new sources, Phase II covers large, existing power plants, and Phase

III regulates other power plants and industrial facilities. *Ibid.*

The Phase I Rule requires use of a closed-cycle cooling system or alternative technology capable of a comparable reduction in impingement and entrainment. 69 Fed. Reg. at 41,601. Because closed-cycle systems withdraw substantially less water than once-through systems, they destroy far less aquatic life. 69 Fed. Reg. at 41,601 & n.44. EPA estimates that a closed-cycle system may reduce impingement mortality and entrainment by as much as 98 percent, when compared with a once-through system. *Ibid.* On judicial review, the Second Circuit largely upheld the Phase I Rule. See *Riverkeeper I*, 358 F.3d at 181.

4. On July 9, 2004, EPA issued its Phase II Rule. Because large, existing power plants withdraw approximately 214 billion gallons of cooling water each day, 69 Fed. Reg. at 41,586, this rule regulates the vast majority of withdrawals. EPA declined to select closed-cycle cooling as BTA for large, existing power plants—as it had for new plants under the Phase I Rule—and instead adopted national performance standards based on reductions in impingement mortality and entrainment associated with a "range" of technologies (including fine- and wide-mesh screens, aquatic filter barrier systems, barrier nets, and fish return systems) that EPA "determined to be commercially available for the industries affected as a whole." 69 Fed. Reg. at 41,598-41,599, 41,601. The performance standards require as little as 60 percent reduction in entrainment and 80 percent reduction in impingement mortality. 40 C.F.R. § 125.94(b)(1), (2). Thus, the Phase II standards require far less than the

98 percent reductions achievable with closed-cycle cooling.

The Phase II Rule also allows for two site-specific exceptions from the general requirements—a "cost-cost variance" and a "cost-benefit variance." 40 C.F.R. § 125.94(a)(5)(i), (ii). The former is available if a plant demonstrates that its costs of complying "would be significantly greater than the costs considered by the Administrator * * * in establishing the applicable performance standards," while the latter applies where a plant shows that its compliance costs "would be significantly greater than the benefits of complying with the applicable performance standards." *Ibid.* Variance requests are evaluated by the applicable permitting authority, including a state permitting authority operating under the National Pollution Discharge Elimination System ("NPDES"). 69 Fed. Reg. at 41,593.[3] If a facility makes either required showing, the permitting authority "must make a site-specific determination" of BTA and impose "site-specific alternative requirements" that are "as close as practicable to the applicable performance standards." 40 C.F.R. § 125.94(a)(5)(i), (ii). Or the permitting authority may conclude that additional measures are unnecessary, either because of their "significantly greater costs" under the cost-cost variance or because

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[3] NPDES is the permitting process though which the requirements of the Act and its regulations are enforced. 33 U.S.C. § 1342(b). Every facility operating a cooling water intake structure must obtain a permit from either EPA or an EPA-approved state agency. *Ibid.*; see also 40 C.F.R. § 123.1(d). Forty-five States and the Virgin Islands are authorized to administer the NPDES permitting program. 69 Fed. Reg. at 41,582.

the "costs would be significantly greater than the benefits" under the cost-benefit variance. *Ibid.*

5. On petition for review, the Second Circuit remanded for additional explanation of EPA's choice of BTA and, if necessary, for a new determination of BTA. Pet. App. 41a-42a. The court noted that "the record is unclear as to the basis for the EPA's selection of the suite of technologies as BTA," and suggested that EPA rejected closed-cycle cooling as BTA only by using cost-benefit analysis in violation of § 316(b). Pet. App. 34a-41a. Because the Rule's cost-benefit variance authorized site-specific determinations of BTA based on cost-benefit analysis, the court rejected it as well. Pet. App. 63a.

The court did not reject outright the cost-cost variance. Instead, the court noted that although § 316(b) does not expressly authorize EPA to allow permitting authorities to grant variances from generally applicable requirements, it did not doubt that EPA could allow variances so long as the agency "'guide[d] the permitting authority to consider appropriate factors and allow[ed] relaxation of the Rule's uniform technology requirements only insofar as necessary to account for unusual circumstances not considered by the Agency during its rulemaking.'" Pet. App. 55a-56a n.22 (brackets in original) (quoting *Riverkeeper I*, 358 F.3d at 193-194). However, because of procedural problems in the promulgation of the cost-cost variance and because the variance is expressly premised on the validity of the BTA determination, which itself was remanded for further explanation, the court found it necessary to remand the cost-cost

variance, too, for additional proceedings. Pet. App. 56a-57a.

On April 14, 2008, this Court granted certiorari on the question "[w]hether Section 316(b) of the Clean Water Act, 33 U.S.C. § 1326(b), authorizes the Environmental Protection Agency (EPA) to compare costs with benefits in determining the 'best technology available for minimizing adverse environmental impact' at cooling water intake structures."

SUMMARY OF ARGUMENT

This Court should affirm the judgment below for all of the reasons set forth in state-respondents' brief. Petitioners' contrary position is impossible to square with the plain language of § 316(b), the provision's context within the Clean Water Act, and the legislative history of the 1972 Clean Water Act amendments. This brief provides two additional reasons—both of particular significance to the States, who share responsibility for enforcing the Clean Water Act—for affirming the decision below.

First, petitioners and their *amici* incorrectly argue that, without the authority to undertake a cost-benefit analysis, neither EPA nor state permitting authorities will be able to account for local circumstances by providing for site-specific compliance alternatives. As the Second Circuit correctly concluded, a properly crafted variance provision would address site-specific considerations, without weighing costs and benefits in making these individualized determinations. Neither petitioners nor their *amici* successfully identify any circumstance under which site-specific relief from generally applicable standards would be appropriate under the Clean Water Act but somehow unavailable without a cost-benefit variance provision.

Second, requiring state permitting authorities to perform cost-benefit analysis on a case-by-case basis would strain state resources, fuel needless disputes between permit writers and applicants, and prolong the permitting process. Given the complex nature of biological systems and the concomitant complexities associated with quantifying and monetizing environmental benefits, any such analysis is a time-

consuming and resource-intensive process. Moreover, because EPA failed to complete its own benefits analysis for the Phase II Rule, and therefore undervalued environmental benefits, there is a real risk that States also will be unable to fully value the benefits associated with reductions in impingement and entrainment, yielding inconsistent or inaccurate permitting decisions. For these practical reasons, States should not be expected to perform cost-benefit analysis when EPA itself did not deliver it and when not required by Congress.

ARGUMENT

Petitioners and their *amici* fail in their effort to overcome language and history with a policy argument—that only a cost-benefit analysis can account for local factors specific to individual sites. In fact, the variance process already accounts for these factors, without departing from the Act's plain language and legislative history. And even if the promotion of good policy were a sound basis for ignoring text and history, that policy surely favors the respondents here, for the rule that petitioners espouse would require States needlessly to undertake burdensome cost-benefit analyses.

I. SITE-SPECIFIC CONSIDERATIONS ARE PROPERLY ADDRESSED THROUGH THE VARIANCE PROCESS, WITHOUT RESORT TO COST-BENEFIT ANALYSIS.

Petitioners and their state *amici* argue that the court below unadvisedly adopted a "'one-size-fits-all'" approach to the regulation of cooling water intake structures, Entergy/PSEG Br. 31, Nebraska Br. 10, and that, without the authority to undertake cost-benefit analysis when determining BTA, permitting

authorities will be unable to "tak[e] account of local waterbody characteristics" when writing permits and "provide site-specific compliance options," Nebraska Br. 8; see also Entergy/PSEG Br. 48. This concern is misplaced. The Second Circuit correctly concluded that site-specific considerations may be addressed through the variance process, and that cost-benefit analysis is unnecessary in making these individualized determinations. Pet. App. 55a-56a & n.22. Tellingly, neither petitioners nor their *amici* identify a single, hypothetical circumstance in which a deviation from generally applicable standards would be appropriate yet unavailable without cost-benefit analysis.

Although the Second Circuit remanded the cost-cost variance provision for further proceedings, the court did not doubt EPA's authority to make site-specific compliance alternatives available. Pet. App. 55a-57a & n.22. The court thus followed its prior holding in *Riverkeeper I* that while § 316(b) does not specifically authorize EPA to allow site-specific variances from general standards, this silence does not prohibit EPA from allowing such variances, so long as the variance provision does not leave "alternative requirements to the Agency's 'unfettered discretion'" and "'guide[s] the permitting agency to consider appropriate factors * * *.'" Pet. App. 55a-56a n.22 (quoting *Riverkeeper I*, 358 F.3d at 193-194). Although the issue of whether EPA is either authorized or required to provide for variances from § 316(b) for site-specific conditions is not before this Court, neither respondents nor their *amici* question the EPA's ability to provide site-specific compliance options—provided their availability is limited by consideration of appropriate factors—in light of this Court's decision in

E.I. du Pont de Nemours & Co. v. Train, 430 U.S. 112 (1977).

In *du Pont*, the Court held that § 301 of the Act allows the EPA to set uniform, industry-wide effluent limitations for existing plants, "so long as some allowance is made for variations in individual plants." 430 U.S. at 128. In particular, the Court found that although § 301 only expressly contemplates variances from standards set pursuant to § 301(b)(2)(A), (describing effluent limitations to become effective by July 1, 1983), EPA also must authorize variances from standards set pursuant to § 301(b)(1)(A) (describing the effluent limitations to become effective by July 1, 1977). See 430 U.S. at 128; see also *E.P.A. v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 72 (1980) (noting *du Pont*'s holding that although no "explicit variance provision exists with respect to [1977] standards," such a provision was nevertheless "a necessary aspect of [1977] limitations applicable by regulations to classes and categories of point sources").[4] The Court suggested

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[4] Section 301(c) provides that

> [t]he Administrator may modify the requirements of subsection (b)(2)(A) of this section with respect to any point source for which a permit application is filed after July 1, 1977, upon a showing by the owner or operator of such point source satisfactory to the Administrator that such modified requirements (1) will respect the maximum use of technology within the economic capability of the owner or operator; and (2) will result in reasonable further progress toward the elimination of the discharge of pollutants.

33 U.S.C. § 1311(c).

that a variance provision was necessary to give state permitting authorities an important role in administering the Clean Water Act. See *du Pont*, 430 U.S. at 133 n.24; see also *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1034 (D.C. Cir. 1978) (explaining that, in *du Pont*, "[t]he Court subscribed to the view that, by leaving the granting of variances to the state agencies in the first instance, the significance of their role would be preserved").

Following *du Pont*, therefore, the Second Circuit correctly recognized EPA's authority to allow variances from generally applicable requirements. Accordingly, petitioners and their *amici* are wrong to contend that state permitting authorities will be unable to make site-specific determinations under the Second Circuit's decision.

Nor do petitioners or their *amici* offer even a hypothetical scenario in which a variance from generally applicable standards would be appropriate but unavailable under the decision below. As an initial matter, the suggestion that without cost-benefit analysis, permitting authorities will be forced to "require technology to protect aquatic organisms that are not present" because the affected water bodies contain "essentially minimal aquatic life," Nebraska Br. 9; see also Entergy/PSEG Br. 50 ("[t]he Second Circuit's interpretation would compel EPA to order retrofits that are enormously expensive symbolic gestures"), may quickly be put to the side. The Second Circuit did not hold, and respondents do not contend, that facilities must install outrageously expensive technology under circumstances where it would provide only trivial gains in effectiveness. To the contrary, the court below emphasized that certain facilities "fac[ing]

high compliance costs to achieve the national performance standards * * * may qualify for the cost-cost variance if such variance is retained on remand." Pet. App. 65a.[5] Thus, if a power plant were situated on a water body naturally devoid of aquatic life, the plant's operator would not have to retrofit it with expensive technology that would achieve at best *de minimis* reductions in impingement and entrainment just for the sake of complying with the national rule. Similarly, if the physical constraints of a plant's location made it technologically impossible to meet the national requirements, that facility also could obtain an exception from the generally applicable standards.

Petitioners and their *amici* also maintain that cost-benefit analysis is a necessary tool because under certain circumstances once-through cooling may provide a better means of protecting native aquatic populations than closed-cycle cooling. See UWAG Br. 52 & n.24; Nebraska Br. 9. But petitioners and their *amici* together identify only two examples of this purported phenomenon, neither one of which is persuasive.

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[5] The Second Circuit's approach comports with longstanding case law authorizing agencies to make *de minimis* exceptions to regulatory requirements even when the statutory language does not authorize such exceptions. See *Alabama Power Co. v. Costle*, 636 F.2d 323, 360 (D.C. Cir. 1979) (recognizing an "agency power, inherent in most statutory schemes, to overlook circumstances that in context may fairly be considered *de minimis*"); *Monsanto Co. v. Kennedy*, 613 F.2d 947, 954 (D.C. Cir. 1979) (finding "latitude inherent in the statutory scheme to avoid literal application of the statutory [language] * * * in those *de minimis* situations that * * * clearly present no public health or safety concerns").

First, *amici* argue that once-through cooling offers the "best means of maintaining the native aquatic organisms" in water bodies where "the major fish species that would incur impingement and entrainment mortality is invasive." Nebraska Br. 9; see also UWAG Br. 52-53 n.24. But as petitioners concede, EPA itself has disapproved this view, see *ibid.*; see also *id.* at 19 (noting that EPA "chose not to draw distinctions * * * based on the type of species affected"), rejecting in both the Phase I *and* Phase II rulemaking the power industry's argument that not all impingement and entrainment effects qualify as "adverse" environmental impacts because some "nuisance" species "require eradication." Pet. App. 86a (citing *Riverkeeper I*, 358 F.3d at 196). The Second Circuit, in turn, has twice approved EPA's approach on this score as "eminently reasonable." *Riverkeeper I*, 358 F.3d at 196; see also Pet. App. 86a-87a. In any event, because the warmer water discharged by once-through cooling may provide welcome habitat for invasive species while negatively impacting native organisms, there is no assurance that the use of this method will have the favorable outcome petitioners and their *amici* hypothesize. Moreover, neither the Clean Water Act nor § 316(b) contemplates that cooling water intake structures, notwithstanding their negative environmental effects, should be used to address environmental problems from other sources. States are far better off addressing invasive aquatic organisms at their source than by counting on environmentally destructive cooling methods to do so incidentally.

Second, petitioners and their *amici* point to Florida's West Indian Manatee population, which now

makes its habitat in the heated water discharged by once-through systems. See UWAG Br. 55-56 & n.27; Nebraska Br. 9-10. This concern relates to the effects of thermal discharges rather than impingement and entrainment, however, and thus is properly addressed by the Act's provisions regulating the thermal component of cooling water intake structures, not by § 316(b). Notably, § 316(a) of the Act provides for a variance from the general requirements for thermal discharges if the permit applicant can show that the applicable limitation is "more stringent than necessary to assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is to be made." 33 U.S.C. § 1326(a). Accordingly, so long as a permit applicant can establish that the effluent limits for heat are unnecessary to maintain a balanced indigenous population, the permitting authority may allow a variance from the effluent discharge limits.

Finally, petitioners' *amici* maintain that, unless authorized to apply cost-benefit analysis, States suffering from water shortages will be unable to "ensure that the minimal water necessary is consumed." Nebraska Br. 10. But closed-cycle cooling systems withdraw far less water—as much as 98 percent less—than once-through systems. Accordingly, any concern that the use of closed-cycle cooling might interfere with States' efforts at water conservation rings hollow. Not only will closed-cycle cooling engender the substantial environmental benefits associated with a reduction in impingement and entrainment, but there is no reason to believe that such systems will interfere with States' water management.

II. USE OF COST-BENEFIT ANALYSIS POSES SIGNIFICANT PRACTICAL PROBLEMS FOR STATE PERMITTING AUTHORITIES.

As *amici* explain, although cost-benefit analysis may in some circumstances be a useful tool for identifying when the benefits of regulation exceed its costs and thereby assist in the process of allocating resources efficiently, use of cost-benefit analysis results in a misallocation of resources if benefits are not correctly valued. See Economists Ackerman, et al. Br. 8-15. Critically, the complicated nature of biological systems raises substantial challenges to efforts to assign an accurate monetary value to environmental benefits. See *id.* at 8, 12. Quantifying and monetizing environmental benefits is a complex, time-consuming, and costly process, and, if the analysis is not completed properly, there is a risk that the effects of maintaining a healthy, biologically diverse environment will be undervalued. See, *e.g.*, Frank Ackerman & Lisa Heinzerling, *Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection*, 150 U. Pa. L. Rev. 1553, 1563-1581 (2002); Thomas O. McGarity, *A Cost-Benefit State*, 50 Admin. L. Rev. 7, 50-72 (1998).

The difficulties in accurately assessing the value of environmental benefits would raise significant practical problems for States under petitioners' cost-benefit approach. The Phase II Rule requires state permitting authorities to verify that a permit applicant meets the requirements of the approved compliance alternative the applicant selects. 69 Fed. Reg. at 41,643. Under petitioners' view that EPA may weigh costs and benefits when setting national performance standards for cooling water intake structures—and make available a "cost-benefit" compliance

option—state agencies would have to perform cost-benefit analyses in reviewing permit requests for such structures.[6] But undertaking a cost-benefit analysis is a labor-intensive and lengthy process that is likely to strain already limited state resources, encourage contention between applicants and permitting authorities, and slow permitting decisions, thereby delaying the timely issuance of necessary permits. In addition, given EPA's admitted failure to complete its analysis of environmental benefits in the Phase II Rule, there is a real risk that States also will be unable to account for potentially significant benefits associated with the installation of a particular technology.

As petitioners acknowledge, see UWAG Br. 23-24, to qualify for a cost-benefit variance, a permit applicant must submit—and the permitting authority must evaluate for accuracy—documents including a "Benefits Valuation Study," 40 C.F.R. § 125.95(b)(6)(ii). The study must attempt to "fully value the impacts of impingement mortality and entrainment" at the applicant's facility "and the benefits achievable by meeting the applicable performance standards." *Ibid.* Accordingly, the applicant must assign a monetized value to all of the benefits (commercial, recreational, and ecological) of compliance with national standards. 40 C.F.R. § 125.95(b)(6)(ii)(A). The applicant also must quantify and monetize certain "non-use" benefits,

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[6] Petitioners' *amici* suggest that under petitioners' approach, States would be permitted but not required to undertake a weighing of costs and benefits. See Nebraska Br. 13. To the contrary, if the cost-benefit variance is upheld, State permitting authorities will be required to perform cost-benefit analyses when reviewing permit requests that rely on the variance.

ibid.—that is, benefits that arise from reduced impacts to ecological resources that the public considers important, such as threatened or endangered species, 69 Fed. Reg. at 41,647. Attaching a reliable value to non-use benefits can be difficult, however, and, according to EPA, for at least some of these benefits "monetization is not feasible." 69 Fed. Reg. at 41,648 n.50. The Benefits Valuation Study must also include "a narrative description of any non-monetized benefits" arising from compliance with national standards "and a qualitative assessment of their magnitude and significance." 40 C.F.R. § 125.95(b)(6)(ii)(E). Finally, if the permit applicant utilizes an entrainment survival rate other than zero, the applicant must support its chosen rate with "[a]n analysis of the effects of significant sources of uncertainty on the results of the study." 40 C.F.R. § 125.95(b)(6)(ii)(C).

Every request for a cost-benefit variance thus requires the permitting authority to perform a complex review in an effort to verify the accuracy of the permit applicant's efforts to quantify and monetize the benefits of using a given technology at a particular facility. Indeed, in the rulemaking at issue here, EPA failed to complete its own analysis of the environmental benefits and conceded the difficulty of this undertaking, explaining that:

> [e]stimating economic benefits is challenging because of the many steps necessary to link reductions in impingement and entrainment to changes in impacted fisheries and other aspects of relevant aquatic ecosystems, and then to link those ecosystem changes to the resulting changes in quantities and values for the associated environmental goods and

> services that are ultimately linked to human welfare.

69 Fed. Reg. at 41,655. Thus, EPA's own findings confirm that the availability of a cost-benefit variance will make any agency's review of a permit application seeking such a variance an onerous process that will require substantial expertise and consume significant resources. Moreover, under petitioners' view, state permitting authorities will often be called upon to make these difficult determinations. In petitioners' own words, impingement and entrainment effects "vary dramatically from facility to facility," and, as a result, a significant number of BTA determinations must be made on a case-by-case basis. Entergy Corp./PSEG Br. 47; accord UWAG Br. 51-57.

EPA's findings also demonstrate that use of cost-benefit analysis is likely to slow down the permitting process. For example, under the cost-benefit compliance option, the permitting authority determines BTA only after it attempts to predict the benefits that reductions in impingement and entrainment will have on the fishing industry. As EPA acknowledged, however, although there is no doubt that "reducing the number of fish killed will increase the number of fish available for harvest," "[m]easuring the benefits of this effect is less straightforward." 69 Fed. Reg. at 41,659. This is because, as EPA explained in the Phase I Rule, "it is very difficult to assess the cause and effect of cooling water intake structures on ecosystems or an important species within an ecosystem." 66 Fed. Reg. 65,256-01, 65,285 (2001). Such assessments require complex biological studies, which "can take multiple years" and, in addition, because the studies are performed outside controlled

laboratory conditions, they implicate "a multitude of confounding factors," making them "very difficult to perform and * * * causation, in particular, very difficult to determine." *Ibid.* Thus, EPA concluded, "the time and complexity of conducting population studies properly is generally inconsistent with making fast and reliable permitting decisions." *Ibid.*

Finally, EPA, by its own admission, failed to complete the benefits analysis, which raises a real possibility that States will be unable to accurately conduct their own cost-benefit analyses. In the rulemaking below, EPA conceded that it had not assessed the value of all benefits associated with the expected results of the Phase II Rule, resulting in the undervaluation of environmental benefits. 69 Fed. Reg. at 41,657-41,661. For example, EPA acknowledged that "[b]ecause of the uncertainties and assumptions" underlying its analysis, its "estimates of benefits * * * may understate the benefits to recreational anglers." 69 Fed. Reg. at 41,659. The agency also recognized that although reducing impingement and entrainment losses "may result in both use and non-use benefits" and that "there is a real possibility that ignoring non-use values could result in serious misallocation of resources," it was "unable to value the non-use benefits associated with" the Phase II Rule. 69 Fed. Reg. at 41,660-41,661 (internal quotation marks and citation omitted); see also 69 Fed. Reg. at 41,666 ("EPA was not able to estimate the monetary value of non-use benefits resulting from the rule, although the Agency believes non-use benefits may be significant.").

There is no reason to believe that state permitting authorities—who generally have fewer resources in

terms of funding and expertise than EPA—will be able to perform an analysis that EPA failed to deliver. Instead, the difficulties in quantifying and monetizing environmental benefits will only fuel needless disputes between permit writers and applicants, further drawing out the permitting process and draining state resources. Moreover, because regulated companies will likely devote more resources to assessing the costs of installing a particular technology than its benefits, the complexity of the benefits inquiry may lead to inconsistent permitting decisions or, worse, decisions that purport to weigh costs against benefits but fail to account for the full environmental benefits associated with a particular technology and therefore authorize less effective methods at the expense of aquatic ecosystems. Given the Clean Water Act's commitment to preserving and maintaining the nation's water bodies, either result is intolerable.

CONCLUSION

The judgment of the court of appeals should be affirmed.

Respectfully submitted.

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